



## U.S. Fish & Wildlife Service

# Horicon Fox River

## *National Wildlife Refuges*

## Summary

### *Draft Comprehensive Conservation Plan and Environmental Assessment August 2006*

## Introduction

The U.S. Fish & Wildlife Service has released the Draft Comprehensive Conservation Plan (CCP) and Environmental Assessment (EA) for Horicon National Wildlife Refuge (NWR) and Fox River NWR for public review.

This summary offers an overview of both refuges and the primary issues facing them, the alternatives considered in planning, and the management direction the Service proposes to adopt. Information on where you can see the complete document and how you can comment on the Draft CCP is provided on page 8.

Comprehensive conservation planning provides long-term guidance for management decisions; sets forth goals, objectives and strategies needed to accomplish refuge purposes; and identifies the best estimate of future needs. While comprehensive conservation plans outline management direction, they do not constitute a commitment for staffing increases, operational and maintenance increases, or funding for future land acquisition.



*Horicon Marsh, HoriconNWR*

## Vital Statistics

### Horicon NWR

Horicon Marsh is the largest freshwater cattail marsh in the United States, consisting of some 32,000 acres. The marsh is 14 miles long and 3 to 5 miles wide and has been classified as a palustrine system dominated by persistent emergent vegetation and floating vascular aquatic beds. The southern one-third of the marsh is managed by the Wisconsin Department of Natural Resources (DNR) while the northern two-thirds of the marsh is managed by the U.S. Fish and Wildlife Service.

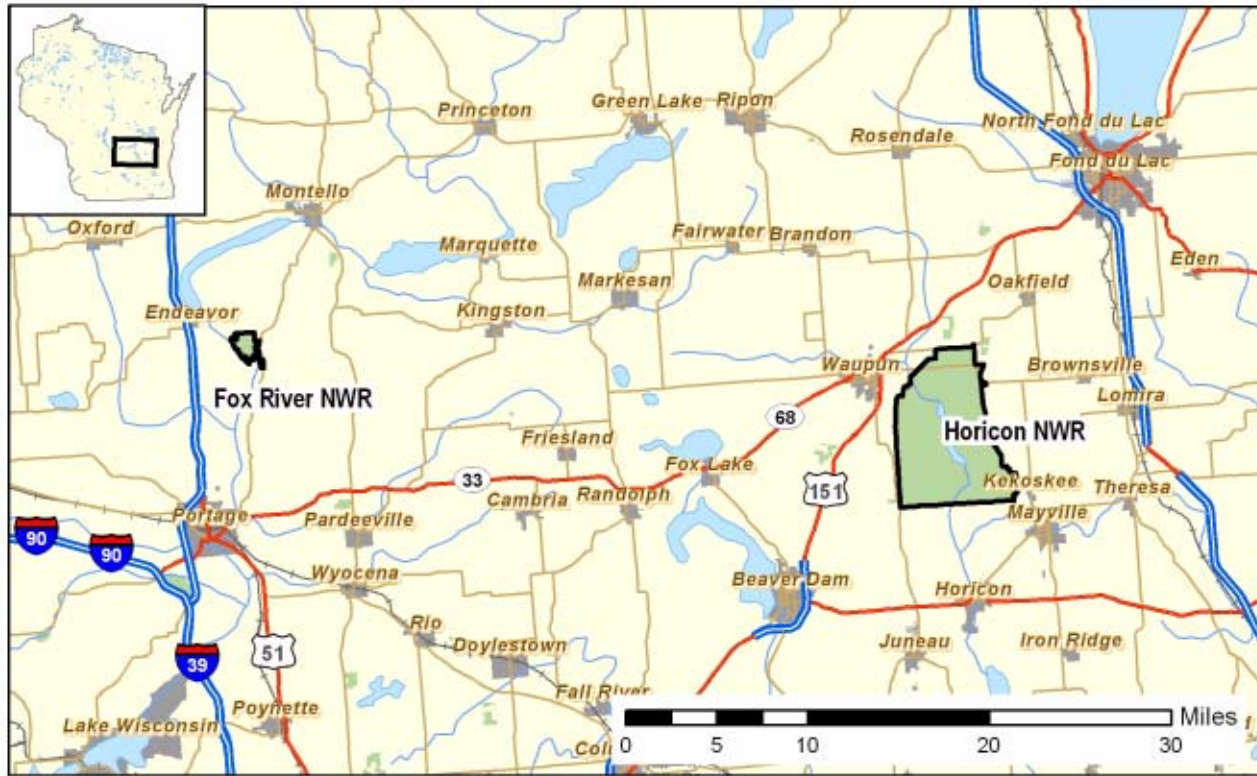
Current Refuge ownership consists of over 15,500 acres of marsh and 5,600 acres of associated upland habitat. Marsh habitat is seasonally to permanently flooded and dominated by cattail, river bulrush, common reed grass, sedges, and reed canary grass. Uplands include nearly 2,000 acres of woodlands and 3,600 acres of grasslands.

Resource management at the Refuge involves using a variety of techniques to preserve and enhance habitats for wildlife, with programs both in

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**Figure 1: Location of Horicon and Fox River National Wildlife Refuges**



marsh and upland management. Marsh management involves the manipulation of water levels to achieve a desired succession of wetland plant communities to meet the seasonal needs of wildlife populations. Upland management includes establishing and maintaining grasslands to provide nesting habitat for ducks, Sandhill Cranes, and various song birds. Management objectives include waterfowl production and migratory bird use, with Redhead ducks being emphasized.

### **Fox River NWR**

Established in 1979, Fox River NWR consists of 1,004 acres of land located 10 miles north of Portage, Wisconsin, along County Road F. The Refuge is administered by staff at Horicon NWR, approximately 40 miles to the east.

The majority of the Refuge is shallow marsh, sedge meadow, fen, or wet prairie wetlands. Upland prairie and forest is also present on the Refuge. The matrix of wetland and upland habitat provides excellent habitat for both wetland and upland associated wildlife, such as ducks, Greater Sandhill Cranes, herons, rails, songbirds, deer, turkey, and

Bobwhite Quail. Approximately 50 cranes use the Refuge during the summer and more than 300 use it as a staging area during fall migration.

Current management on the Refuge is focused on restoring historic upland habitats including oak savanna and open grasslands. The natural hydrology of the area is also being restored primarily through the filling of agricultural drainage ditches. Visitor facilities and opportunities are minimal but include two parking areas, signs, and an annual deer hunt.

Fox River NWR is located across the highway from a County Park named after John Muir, a famous conservationist in the 19th and early 20th centuries, who lived near the County Park and the Refuge during part of his boyhood years.

## **Who We Are and What We Do**

The Refuges are administered by the U.S. Fish and Wildlife Service (Service), the primary federal agency responsible for conserving, protecting, and enhancing the nation's fish and wildlife populations and their habitats. The Service oversees the

enforcement of federal wildlife laws, management and protection of migratory bird populations, restoration of nationally significant fisheries, administration of the Endangered Species Act, and the restoration of wildlife habitat such as wetlands. The Service also manages the National Wildlife Refuge System, which was founded in 1903 when President Theodore Roosevelt designated Pelican Island in Florida as a sanctuary for Brown Pelicans.

Today, the Refuge System is a network of over 545 refuges covering more than 95 million acres of public lands and waters. Most of these lands (82 percent) are in Alaska, with approximately 16 million acres located in the lower 48 states and several island territories. Overall, the Refuge System provides habitat for more than 5,000 species of birds, mammals, fish, and insects. Refuges also provide unique opportunities for people. When it is compatible with wildlife and habitat conservation, they are places where people can enjoy wildlife-dependent recreation such as hunting, fishing, wildlife observation, photography, environmental education, and environmental interpretation.

## Refuge Vision Statements

### Horicon NWR

Horicon National Wildlife Refuge will be beautiful, healthy, and support abundant and diverse native fish, wildlife, and plants for the enjoyment and thoughtful use of current and future generations. The Refuge's hydrologic regime will include a functional Rock River riparian system, with clean water flowing into and out of the Refuge. The Refuge will be a place where people treasure an incredible resource that upholds the distinction of a Wetland of International Importance.

### Fox River NWR

Fox River National Wildlife Refuge will consist of diverse, productive habitats and wildlife that provides conditions found historically (pre-European settlement) in the Upper Fox River watershed. Specifically, the Refuge consists of a mosaic of oak savanna, dry and wet prairie, fens, sedge meadow, and shallow marsh habitats managed to perpetuate a variety of native plant and wildlife species, namely those of priority to the Service.

Refuge staff, located at Horicon NWR, are a multi-disciplined team dedicated to providing

quality habitat and wildlife management, as well as quality wildlife-dependent public use opportunities compatible with Refuge purposes. Local communities and visitors value the Refuge for the personal, financial, and societal benefits it provides. A strong conservation ethic is promoted in the surrounding communities where both John Muir and Aldo Leopold were inspired by nature's beauty, complexity, and value.

## The Planning Process

The CCP planning process began in January 2005 with a kickoff meeting between Refuge staff and planners from the Service's Region 3, Regional Office, in Fort Snelling, Minnesota. The participants in this "internal scoping" exercise reviewed the Horicon and Fox River NWR vision statements and goals, existing baseline resource data, planning documents and other Refuge information. In addition, the group identified a preliminary list of issues, concerns, and opportunities facing the Refuges that would need to be addressed in the CCP.

Public input was encouraged and obtained using several methods, including open houses, written comments during a public scoping period, issue-based focus groups, and personal contacts. Initial public scoping for the Horicon and Fox River NWR CCP began in March 2005 with a series of open house events held in Montello, Wisconsin, for Fox River NWR and in Waupun and Mayville, Wisconsin, for Horicon NWR. Approximately 25 people attended.

All-day public focus group workshops were held to obtain more detailed input on the issues and opportunities identified in preliminary scoping and to begin development of alternatives. A workshop for Horicon NWR was held on June 1-2, 2005, and a



Boardwalk, Horicon NWR



workshop focused on Fox River NWR was held on June 7, 2005. Twenty-eight people, representing Wisconsin DNR, Refuge staff, conservation organizations, neighboring communities, Refuge users, and other stakeholders attended these discussions.

## Issues Addressed in the CCP

The Planning Team compiled the individual comments received during the public scoping process into a series of issues for each Refuge. The issues cover a variety of subjects including wildlife, water management, forest health, and wildlife-dependent recreation. The following is a selection of issues addressed for each of the Refuges.

### Horicon NWR

#### Upland Habitat Restoration and Management

The Refuge could restore areas to historic vegetation or create habitats that are lacking in the area. Possibilities include managing the Refuge's east side as hardwoods mixed forest and the west side as grassland (historic vegetation). Or, Refuge staff could convert all uplands to native grassland on the entire Refuge since grasslands are lacking in area.

#### Off-Refuge Involvement and External Threats (i.e., Watershed Protection)

A large portion of the Horicon NWR focus group workshop was spent discussing sedimentation and environmental contaminant issues of the Marsh. All participants agreed that soil conservation measures in the upper watershed would go far in reducing these problems. However, increasing wetland conservation and encouraging new agricultural practices will be a huge task that will require innovative approaches to public and private partnerships.

#### Water Management

The management of water levels is the key to maintaining a viable Marsh. However, the State portion of the marsh, Lake Koshong, and other downstream waterbodies control how much water the Refuge can hold and release. The CCP should decide how the pools of Horicon NWR should be managed and could include filling ditches, improving dikes, and adding or removing water control structures.



*Horicon Marsh from the air.*

#### Deer Population Control and Hunting

Horicon NWR supports a number of hunts for white-tailed deer including archery, firearm, and special opportunities for hunters with disabilities. If the deer herd is above desirable population levels, it may cause increased habitat damage, deer/auto collisions, and neighboring crop damage. In addition, chronic wasting disease is a new concern within the State. Increased hunting may be a necessary control measure for all of the above.

#### Upland Game Hunting

Additional upland game hunting opportunities were identified including longer seasons on squirrels, rabbits, and pheasants.

#### State Highway 49 Issues

State Highway 49, a high-volume traffic roadway, bisects the northern edge of the Horicon Marsh. Many participants pointed out that wildlife roadkill on Highway 49 is excessive. In addition, contaminants from Highway 49 include the potential for a toxic spill, road salts, grain spills, and trash deposited along the road.

### Fox River NWR

#### Historic Habitat Restoration

General Land Office surveys from 1832 suggest that much of the landscape around the Refuge was historically dry prairie and oak savanna. The Refuge has been working to restore the uplands to these habitats.

#### Additional Hunting for Small Game and Wild Turkey

A few participants wanted to see more hunting opportunities on the Refuge. Law enforcement concerns and the relatively small size of uplands on the Refuge may preclude some hunts. The Refuge

may be able to support a limited spring hunt for Wild Turkeys on the 250-300 acres of uplands available.

### **Fishing Access**

Boat access for fishing is available along the Fox River. Many people have expressed interest in fishing on Long Lake. The 1-mile hike from the parking lot to the potential fishing spot is expected to limit the number of anglers. Boating access may need to be seasonally restricted to reduce disturbance of migratory birds, especially nesting Sandhill Cranes.

### **On-site Environmental Education and Interpretation**

Participants suggested that the Refuge could work more with the local community and schools. Developing a cadre of teachers and volunteers who could lead field trips was one strategy mentioned.

## **Management Alternatives Considered in the Environmental Assessment**

The three management alternatives for Horicon NWR and two alternatives for Fox River NWR were developed to address most of the issues, concerns, and opportunities identified during the CCP planning process.

### **Horicon NWR**

#### **Alternative A: Current Management Direction (No Action)**

Horicon NWR's Current Direction Alternative manages water impoundments to provide a variety of water conditions for waterbirds including ducks, geese, shorebirds, and wading birds during spring, summer, and fall. Water management is achieved on 17 impoundments or approximately 17,000 acres of wetland habitat. Nearly all of the Refuge uplands, or 5,000 acres, are being restored and maintained as open grasslands and oak savanna to benefit nesting grassland birds and waterfowl.

Landscape and watershed involvement by Service employees is limited due to staffing constraints but includes managing FmHA easements, Partners for Fish and Wildlife projects, and participation on inter-agency teams, and other partnership efforts.

All six of the priority wildlife-dependent recreation uses allowed within the National Wildlife Refuge System (hunting, fishing, wildlife

observation, photography, environmental education, and environmental interpretation) are encouraged and take place at Horicon NWR. Visitor services under the Current Direction Alternative are provided by a variety of on-Refuge environmental education programs, auto-tour routes, annual open houses, foot trails, visitor center, a floating boardwalk, and observation platforms. The hunting program consists of a firearms and archery deer season and an upland small game season. Fishing opportunities include bank fishing at three designated sites. Off-Refuge outreach by Refuge staff includes school talks, radio programs, informational kits, and event displays.

#### **Alternative B: A Free-Flowing Rock River (Preferred Alternative)**

This alternative would seek to re-establish a meandering river system flowing into the north end of the Horicon Marsh. The radial gate would remain open so that the marsh is managed as an open system. Water management would continue on the 16 sub-impoundments.

Existing and newly-acquired Refuge upland acres would continue to be restored and maintained as open grasslands or oak savanna, which is typical of habitat types prior to European settlement and/or represents a declining and rare habitat type. Trees along old fences and lanes would be removed in order to increase the grassland parcel sizes.

Landscape and watershed involvement by staff and partners would be increased to reduce sedimentation rate and water quality in the Horicon Marsh. Strategies would include personal contact with the agricultural community and other landowners by non-government personnel, increased Partners for Fish and Wildlife projects in the watershed, and participation on inter-agency teams, and other partnership efforts.



*Wetland walk, Horicon NWR*

All six of the wildlife-dependent recreation uses allowed within the National Wildlife Refuge System would take place at Horicon NWR. Hunting, fishing, wildlife observation, and photography opportunities would all increase. Visitor services would be provided through a variety of on-Refuge environmental education programs, auto-tour routes, annual open houses, foot trails, visitor center, a floating boardwalk, and observation platforms. Community outreach, including school talks, teacher workshops, informational kits, and event displays, would increase with new staff and additional volunteer involvement.

### **Alternative C: The Big Pool**

Alternative C would seek to manage the majority of Horicon Marsh, approximately 10,845 acres, as one large waterbody. The main dike would be removed and the natural sinuosity of the Rock River would be encouraged. The removal of the southern dam, operated by the Wisconsin DNR, would also be explored. Water management control would still exist on 16 sub-impoundments or approximately 5,000 acres of wetland habitat.

The problem of marsh sedimentation would be solved under this alternative by dredging the main channel. The nutrient-rich dredge spoil could be sold to farmers within the watershed to enhance depleted cropland soils. Essentially, the sediments would be put back to their source. In addition, new soil erosion prevention measures would be put into place where spoil is distributed in order to slow the rate of future sedimentation in the Horicon Marsh.

Visitor service improvements would be the same as Alternative B.

## **Fox River NWR**

### **Alternative A: Current Management Direction (No Action)**

The Current Direction Alternative continues with ongoing restoration and management activities on Refuge wetlands and uplands. The goal of restoration on the Refuge is to create a mosaic of habitat conditions that were present prior to European settlement, namely dry tallgrass prairie, oak savanna, fens, sedge meadow, and shallow emergent marsh wetlands. These habitats would be managed to perpetuate a variety of native plant and wildlife species, especially those of priority to the Service.

The primary Refuge habitat consists of 779 acres of wetlands along the Fox River. The wetlands are composed primarily of sedge meadow, although



*Managed forest, Fox River NWR.*

fens, shallow marsh, and wet prairie are present as well. Approximately 375 acres of the wetland has never been drained; the remainder was drained in 1978 before the Service purchased the land. The 375 acres of undrained wetlands would continue to be protected under the Current Direction Alternative. The hydrologic regime and other historic habitat conditions within the 404 acres of drained wetlands would be restored and maintained through ditch plugging and filling, prescribed fire, and subsequent monitoring.

Historically, the uplands at Fox River NWR consisted of oak savanna and dry prairie meadows. The oak savanna history is evidenced by the presence of open-grown mature oaks that are now part of a closed canopy forest. Nearly all of the Refuge uplands, or 225 acres, are being restored and maintained as open grasslands and oak savanna to benefit nesting grassland birds, birds dependent upon oak savanna, and waterfowl. These habitat types were found in the area during the early 1800s, prior to European settlement. Invasive plant species are controlled using a variety of chemical, mechanical, and biological methods.

Visitor services under the Current Direction Alternative would be provided solely through an annual deer hunt. Hunting would continue to be used as a management tool to maintain an optimal white-tailed deer population. The Refuge would continue to be closed to visitors the remainder of the year.

### **Alternative B: Historic Habitat Conditions and Enhanced Visitor Services (Preferred Alternative)**

Alternative B would include more opportunities for wildlife-dependent recreation on the Refuge than Alternative A. The Refuge would be open

seasonally for wildlife observation and photography and environmental education and interpretation. A fishing program would be initiated, new wildlife observation and photography opportunities would be added, and a basic environmental education and interpretation program would be started. Deer harvest would be expanded. Ice fishing would be allowed on Refuge water bodies. The proposed Wisconsin Ice Age State and National Trail segment may cross Refuge lands and could serve as access for wildlife observation and photography, hunting, and environmental education and interpretation. Environmental education for school groups would be encouraged based on staff availability and interpretive displays placed on the Refuge's two kiosks.

Refuge staffing would remain minimal, although we would seek to add a part-time position dedicated to the Refuge.

Habitat restoration and management would continue as in the Current Direction Alternative to perpetuate a variety of native plant and wildlife species, especially those of priority to the Service.

## Management Goals

The goals are designed to meet the purposes of the Refuge and the mission of the National Wildlife Refuge System. The following goals were established for Horicon and Fox River NWRs and will form the direction for the Refuge over the next 15 years.

### Horicon NWR

*Goal 1. Wildlife* – Protect, restore, and maintain a diversity of wildlife species native to habitats historically found on the Refuge, with special emphasis on Service Regional Conservation Priority Species.

*Goal 2. Habitat* – Provide a diverse mosaic of wetland, upland, and riverine habitats that meet the needs of Service priority species dependent upon them through habitat preservation, restoration, and management.

*Goal 3. People* – Provide quality wildlife-dependent recreational and environmental education opportunities to a diverse audience. These activities will promote understanding, appreciation, and support for Horicon National Wildlife Refuge, the National Wildlife Refuge System, and wildlife conservation.

### Fox River NWR

*Goal 1: Wildlife* – Protect, restore, and maintain a diversity of wildlife species native to habitats historically found in the Upper Fox River Watershed, with special emphasis on Service priority species, through habitat preservation, restoration, and management.

*Goal 2: Habitat* – Protect, restore, and enhance the wetland and adjacent upland habitat on the Refuge to emulate a naturally functioning, dynamic ecosystem containing a variety of habitat conditions that were present prior to European settlement, namely dry tallgrass prairie, oak savanna, fens, sedge meadow, and shallow emergent marsh wetlands.

*Goal 3: People* – Provide quality visitor services compatible with the purposes for which the Refuge was established and/or the mission of the National Wildlife Refuge System. These wildlife-dependent activities will promote an understanding and appreciation of the naturally functioning landscape and the Service's management efforts on the Refuge.

## Planned Refuge Program Highlights at Horicon NWR

*Marsh Management:* Management strategies will try to re-establish a meandering river system flowing through the north end of the Horicon Marsh. The radial gate will remain open so that the marsh is managed as an open system. Rotational water management will continue on the 16 sub-impoundments to benefit specific Regional Resource Species of Concern.

*Upland Habitat Restoration:* The Refuge will restore historic vegetation and create habitats that are lacking in the area. Up to 100 acres of oak savanna will be restored to benefit regional habitat diversity and grassland-dependent wildlife species. Between 500 to 1,000 acres of upland grasslands, primarily native dry tallgrass prairie, will be restored and managed to benefit declining wildlife species that depend on this habitat type including Bobolinks, Grasshopper Sparrow and Eastern Meadowlark.

*Reduced Wildlife-Vehicle Collisions on State Highway 49:* The Draft CCP outlines physical and educational strategies to reduce the loss of wildlife along State Highway 49, which is a major high speed roadway that bisects the northern section of



the Horicon Marsh for 2.5 miles. During the years 2002 through 2005, well over 4,200 dead animals (waterfowl, bitterns, river otters, muskrats, frogs, and toads), were found along this roadway.

*Increased Conservation Projects with Landowners in the Upper Rock River Watershed:* Refuge staff will work closely with the federal Partners for Fish and Wildlife staff, Wisconsin DNR, counties, and non-profit groups to encourage understanding, and action, of private landowners in the upper watershed. Landowners and the public will be informed of the critical issue of soil erosion and contaminants impacting the Horicon Marsh.

*Expanded Recreational Opportunities:* Wildlife-dependent recreational activities will increase under the preferred alternative. The hunting season for small game will be expanded to match the entire state season. Environmental education opportunities will increase due to new trail openings, new and improved facilities, and additional community outreach.

## Planned Refuge Program Highlights at Fox River NWR

*Habitat Restoration:* General Land Office surveys from 1832 suggest much of the landscape around the Refuge was historically dry prairie and oak savanna. The Refuge will continue working to restore these upland habitats, as well as maintain the fens, sedge meadow, and shallow emergent marsh wetlands.

*New Recreational Opportunities:* The future for the Refuge will include more opportunities for wildlife-dependent recreation. Historically, the Refuge has been closed to public use except during the firearms deer season. New opportunities will include expanded deer harvest, the initiation of a fishing program, new wildlife observation and photography opportunities, and the beginning of an environmental education and interpretation program. All new activities will occur at times that do not interfere with the needs of migratory birds and other wildlife.

## Where to Find the Draft Plan

You can see the complete Draft CCP in a number of places. If you have access to the Internet, you can find a link to the draft CCP at:

<http://www.fws.gov/midwest/planning/horicon>

Paper copies and compact disks of the Draft CCP are also available in a limited supply. Please call Conservation Planning toll free at 1-800-247-1247, ext. 5429, to request a paper copy or a compact disk. Copies of the Draft CCP are also available for viewing at local libraries in Beaver Dam, Fox Lake, Iron Ridge, Juneau, Mayville, Oakfield, Waupun and Horicon.

## Open House Events Planned

Two open house events have been scheduled for discussion of the Draft CCP/EA.

The Horicon NWR open house will be held from 4 p.m. to 8 p.m. on Wednesday, August 9. The event will be held at the Refuge Office/Visitor Center, W4279 Headquarters Road, in Mayville, Wisconsin.

The open house for Fox River NWR is scheduled from 4 p.m. to 7 p.m. on Thursday, August 10, at Moundville Town Hall. The Hall is located at W5310 County Road O in Endeavor, Wisconsin.

## Tell Us What You Think

We invite you to review the Plan and tell us what you think. Your comments on the Draft CCP will help us write a final plan that is both visionary and practical.

Written comments are welcome, and comments can also be e-mailed through the Horicon NWR planning project website at:  
<http://www.fws.gov/midwest/planning/horicon>

In order for us to consider your comments when writing the final plan we need to receive them by August 28, 2006. Address correspondence to:

Gary Muehlenhardt, Refuge Planner  
Attn: Horicon/Fox River CCP Comment  
Bishop Henry Whipple Federal Building  
1 Federal Drive, Room 530  
Fort Snelling, MN 55111-4056



Toad and frog, Horicon NWR